



Harvard-Smithsonian Youth Astronomy Network (YouthAstroNet)

An NSF-sponsored project to engage youth in science and technology learning via astronomy and its career connections.

Are you interested in sharing a universe of STEM learning opportunities with your middle-school age youth? We invite you and your middle-school age youth to join our Harvard-Smithsonian Youth Astronomy Network (YouthAstroNet), a national STEM learning community of students and educators using our MicroObservatory online robotic telescope network.

Nationwide, middle-school youth from underrepresented communities have few opportunities to engage in authentic STEM investigations that build on the students' intrinsic interests in space science and robotics to increase their interests in both IT (Information Technology) and STEM careers. *YouthAstroNet* is an NSF-funded research project to create and study a nationwide online learning community of grades 5-8 students, educators, and parents and caregivers that features remotely-controlled, online telescopes from the Harvard-Smithsonian Center for Astrophysics, and complementary curricula. Using the MicroObservatory Robotic Telescope Network you and your youth can take your own images to explore the Moon, Sun, planets, stars, and galaxies; and then do hands-on activities to investigate more about space, and the technologies that operate the robotic telescopes.

By joining *YouthAstroNet*, you can participate in online workshops to learn how to implement *YouthAstroNet* workshops and programs. Dedicated educators like you are at the heart of the *YouthAstroNet* project. *No prior astronomy knowledge is needed*; those who become part of the *YouthAstroNet* online learning community will have ongoing access to a wide array of learning resources for themselves as well as for students. Educators chosen to take part in *YouthAstroNet* must be willing to participate in the research study that is associated with the program, and will receive a \$250 stipend for this participation. Read on to see the benefits of the program and what would be required for your participation. To apply go to this link:

<https://www.surveymonkey.com/r/YAN2018Recruit>

Requirements for participating educators:

- Ability to complete 6-8 hours of self-paced online training
- Watch 3 recorded webinars
- Ability to recruit and engage a group of youth in grades 5-9 (especially girls and/or underrepresented minorities) in at least 8-10 hours of YouthAstroNet programming (much more is possible, but this is a minimum)
- Access to reliable internet-connected computers, at least one for every 2 students. (The YouthAstroNet project can ship a workshop-set of 24 laptops for up to 3 weeks for programs that may need them)
- Willingness to participate in Harvard University research study associated with YouthAstroNet program via completion of online surveys.
- Ability and agreement to facilitate parental consent by distributing forms for student participation in Harvard research study



Benefits and resources for EDUCATORS of middle-school aged youth:

- Ongoing support from astronomy and science education experts from the Harvard-Smithsonian Center for Astrophysics, and from the *YouthAstroNet* volunteer network of STEM professionals.
- Customized online access to MicroObservatory Telescope Network and YouthAstroNet resources, including group accounts for managing and monitoring student activity.
- Kid-tested activity/lesson plans for after-school programs, science clubs, or other informal learning environments. (Linked to NGSS standards for classroom educators)
- Live and archived webinars, video-tutorials, and online discussion groups for learning how to implement YouthAstroNet activities with youth.
- Resources for introducing youth to 21st Century Skills, and IT and STEM careers related to their use of robotic telescopes and digital image processing tools.
- Tools and guides for hosting local *YouthAstroNet* community/capstone events
- Professional Development certificates from the Harvard-Smithsonian Center for Astrophysics. Opportunities to learn from peers, and take on leadership roles in *YouthAstroNet* community.
- Contribute to fundamental research on conditions and strategies that promote youth interest in and disposition towards STEM/IT careers.
- A \$250 stipend for participation in the research study associated with the *YouthAstroNet* program.

Benefits and resources for YOUTH in Grades 5-8 (targeting especially groups underrepresented in STEM, including girls and minority youth):

- Personalized online access to MicroObservatory Telescope Network and *YouthAstroNet* activity resources, including opportunities to earn digital badges for completed projects.
- Dozens of individual and group projects in astronomy and digital technology (novice to advanced)
- Online video tutorials, challenges, and quizzes for self-paced learning
- Online workspace for showcasing student work
- Access to *YouthAstroNet* online mentors who will provide feedback on youth projects, and STEM/IT content and career advice via discussion forums, audio and video conferencing.
- Behind the Scenes Virtual Tours of Harvard-Smithsonian labs, telescopes, workshops
- Opportunities to participate in contests, capstone activities, and *YouthAstroNet* events, and to earn completion certificates from the Harvard-Smithsonian Center for Astrophysics.

Benefits and resources for PARENTS/CAREGIVERS of participating *ITEAMS* youth:

- Periodic *YouthAstroNet* community newsletters
- Accounts on the *YouthAstroNet* community web portal
- Joint youth/adult projects
- Information on STEM & IT career paths and how to support their child
- Community events (e.g., Star parties, Capstone events)

To apply to participate in the YouthAstroNet please complete the following survey:

<https://www.surveymonkey.com/r/YAN2018Recruit>